

REMARKS

The Office Action dated December 12, 2005 has been carefully reviewed and the foregoing remarks are made in response thereto. In view of the above amendments and following remarks, Applicants respectfully request reconsideration and allowance of the claims.

Claims 26 and 46 have been amended above to indicate that the claimed methods involve the use of a set of at least 100 beads, each of which comprise a different probe nucleic acid attached thereto that is between 25 and 100 nucleotides in length. This amendment is made without any disclaimer of subject matter or prejudice as to the filing of a continuation application contain said claims prior to the instant amendment. Support for these amendments may be found throughout the specification, for instance at page 12, line 36, in claim 31, which has been canceled, and in Pirrung US 5,143,854 (col. 10, lines 11-15), which is incorporated by reference at page 1, paragraph 1, and at various locations throughout the specification. Claim 41 has been amended to correct dependency. No prohibited new matter has been introduced.

Turning now to the Office Action, claim 41 has been rejected under 35 U.S.C. §112, second paragraph for alleged lack of antecedent basis for "the fluorescent label." Claim 41 has been amended above to depend on claim 40. Accordingly, this rejection may be withdrawn.

Claims 26-28, 30, 34-38, 40-49, 51-53 and 55 have been rejected under 35 U.S.C. §102(a) as being anticipated by Drmanac et al. (EP 392 546). Without agreeing with this rejection and solely in an effort to advance the present application to allowance, Applicants respectfully note that claims 26 and 46 have been amended above to incorporate the limitation of claim 31. Claim 31 was not included in the rejection, therefore, the rejection may now be withdrawn.

Claims 26-30, 34-36, 38-39, 42-51 and 53-54 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Southern (WO 89/10977). Without agreeing with this rejection and solely in an effort to advance the present application to allowance, Applicants respectfully note that claims 26 and 46 have been amended above to incorporate the

limitation of claim 31. Claim 31 was not included in the rejection, therefore, the rejection may now be withdrawn.

Claims 26-55 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Wallace (WO 89/10414) in view of Malcolm *et al.* (WO 86/03782). According to the Office Action, it would have been obvious to combine the bead format sandwich assay of Malcolm with the ASP technology of Wallace. Applicants respectfully traverse the rejection.

On page 10 of the Office Action, the Examiner asserts that it one of ordinary skill would have been motivated to detect hundreds or thousands of different genetic markers because Wallace specifically teaches the benefits of detecting multiple genetic markers and the ordinary artisan would have been motivated to detect a large number of markers in order to obtain a large amount of information. However, the skilled artisan would not have been motivated to use the bead sandwich assay disclosed by Malcolm *et al.* for this purpose, as Malcolm *et al.* does not disclose how to make or screen a large number of beads having probes for different genetic markers. The disclosure of Malcolm *et al.* is limited to the use of the bead-based sandwich assay for the detection of a single marker at a time (see, for example, the Summary of the Invention at pages 3-4). There is no suggestion that the skilled artisan could use the sandwich assay to detect a large number of markers simultaneously and no teaching as to how the skilled artisan would accomplish such a method.

In light of the above remarks and in an effort to expedite allowance of the present application, independent claims 26 and 46 have been amended above to indicate that the sample of polynucleotides is hybridized to a set of at least 100 beads, each of which comprise a different probe nucleic acid. Neither Wallace nor Malcolm *et al.* teaches how one would make or screen such a set of beads for genetic markers as recited in claims 26 and 46. Reconsideration and withdrawal of the rejection under §103(a) based on Wallace and Malcolm *et al.* are respectfully requested.

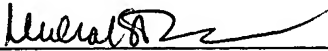
Conclusion

The foregoing amendments and remarks are being made to place the application in condition for allowance. Applicant respectfully requests entry of the amendments, reconsideration, and the timely allowance of the pending claims. A favorable action is awaited. Should the Examiner find that an interview would be helpful to further prosecution of this application, they are invited to telephone the undersigned at their convenience.

If there are any additional fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-1283. If a fee is required for an extension of time under 37 C.F.R. §1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,
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